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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,533	10/18/2000	Charles David Bauman	RPS920000076US1	5366

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EXAMINER

TRUONG, BAO Q

ART UNIT

PAPER NUMBER

2187

DATE MAILED: 09/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/691,533

Applicant(s)

BAUMAN ET AL.

Examiner

Bao Q. Truong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,11,12,16,17 and 21 is/are rejected.
- 7) ☒ Claim(s) 3-5,8-10,13-15 and 18-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 6) ☐ Other: _____

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1. The instant application having Application No. 09/691,533 has a total of 21 claims pending in the application; there are 5 independent claims and 16 dependent claims, all of which are ready for examination by the examiner.

Information Disclosure Statement

2. As required by M.P.E.P § 609 (C), the applicant's submission of the Information Disclosure Statement, dated on 10/18/2000, is acknowledged by the examiner; and the cited reference has been considered in the examination of the claims now pending. As required by M.P.E.P § 609 C (2), a copy of the PTO-1449 initialed and dated by the examiner is attached to the instant office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6, 11, 16, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blumenau (U.S. Patent No. 6,442,659) in view of Burkes et al. (U.S. Patent No. 5,542,065).

Referring to claims 1, 6, 11, 16, and 21, Blumenau teaches a method of storing data in a data processing system having a first region and a second region of physical memory (see figure1), wherein said second region mirroring the first region (see the abstract).

However, Blumenau does not clearly teach steps of: (1) detecting a memory exhaustion condition while said second region is mirroring at least part of said first region; (2) in response to said memory exhaustion condition, at least partially deactivating memory mirroring between said first and second regions; (3) augmenting said first region with at least part of said second region, such that said memory exhaustion condition is eliminated.

Burkes teaches a method of storing data similar to that of Blumenau. Burkes further teach steps of: (1) detecting a memory exhaustion condition as determining if the data storage system approaches full capacity; (2 & 3) deactivating memory mirroring between said first and second regions and augmenting said first region with at least part of said second region such that said

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memory exhaustion condition is eliminated as moving data from mirror RAID areas to parity RAID areas to meet all demand by the user (see column 6: lines 38-67 and column 7: lines 1-15). The applicant's recited "detection logic", "detection means", "configuration logic", and "configuration means" are represented by element 16 in figure 1 of Burkes.

It would have been obvious to one having an ordinary level of skill in the art at the time the invention was made to include, in the method taught by Blumenau, steps of (1) detecting a memory exhaustion condition while said second region is mirroring at least part of said first region; (2) in response to said memory exhaustion condition, at least partially deactivating memory mirroring between said first and second regions; (3) augmenting said first region with at least part of said second region, such that said memory exhaustion condition is eliminated. This would have been obvious because Burkes clearly teaches that the data storage system, which moves data from mirror RAID areas to parity RAID areas to meet all demand by the user, affords maximum flexibility and adaptation (see column 7: lines 11-15).

5. Claims 2, 7, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blumenau (U.S. Patent No. 6,442,659) in view of Burkes et al. (U.S. Patent No. 5,542,065) as applied to claims 1, 6, 11, and 16 above, and further in view of Schulz et al.

As to claims 2, 7, 12, and 17, Blumenau teaches a method of storing data in a data processing system above. Blumenau further teaches that data is compressed into said second region of physical memory (see figure 1 and the abstract). And Burkes teaches that step of detecting a memory exhaustion condition comprises determining that said first region lack sufficient available capacity to accommodate current requirement for real memory, as mentioned

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above in claim 1, 6, 11, and 16 (see column 7: lines 1-15). The applicant's recited "memory controller" and "memory manager" are represented by element 16 in figure 1 of Burkes.

However, both Blumenau and Burkes does not clearly teach that said data processing system compressing real memory into said first region of physical memory.

Schulz teaches a method of storing data into a main memory wherein said data is stored in a compressed format (see figure 3 and the abstract).

It would have been obvious to one having an ordinary level of skill in the art at the time the invention was made to further configure the method taught by Blumenau such that said data processing system compressing real memory into said first region of physical memory. This would have been obvious because Schulz teaches that data is stored into main memory in a compressed format for the purpose of gaining high storage efficiency (see the abstract).

Allowable Subject Matter

6. Claims 3-5, 8-10, 13-15, and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Q Truong whose telephone number is (703) 308-7090. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald A Sparks, can be reached on (703) 308-1756. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Bao Q Truong

BT

Patent Examiner

August 25, 2003

A handwritten signature in black ink, appearing to read "Donald A. Sparks". The signature is stylized with a large initial "D" and "S".

Donald Sparks

Supervisory Patent Examiner

Technology Center 2100